

WHAT IS CLAIMED IS:

1 1. A method of providing error detection and correction of transmission
2 of data units between a sending and a receiving agent connected together in a network or
3 computer interconnect environment, the data units having a predetermined size, a control
4 portion and an information portion, the method comprising:

5 inserting an expected sequence identifier in each data unit;
6 examining the sequence identifiers of the data units to determine the
7 sequence of data units being received by the receiving agent; and,
8 requesting the sending agent to resend a data unit for which it is determined
9 that the sequence identifier is incorrect.

2 2. A method as defined in claim 1 wherein said predetermined size is
3 within the range of about 64 to about 256 bits.

4 3. A method as defined in claim 2 wherein said predetermined size is
5 about 128 bits.

6 4. A method as defined in claim 1 wherein said sequence identifier is a
7 number that is changed in a predictable manner for each successive unit.

8 5. A method as defined in claim 1 wherein said number incremented by
9 a known value for each successive unit.

1 6. A method as defined in claim 1 wherein said sequence identifier is
2 inserted in the control portion of the data unit.

3 7. A method as defined in claim 1 further comprising retaining a
4 replica of each data unit for a period of time necessary for said examining step to
5 determine that the sequence identifier for a transmitted data unit is correct and discarding
6 said replica when said sequence identifier for the transmitted data unit is correct.

7 8. A method of providing error detection and correction of transmission
8 of data packets comprising at least two flits between sending and receiving agents

connected together in a network or computer interconnect environment, the flits being of a predetermined size and having a control portion and an information portion, the method comprising:

embedding a sequence identifier in each flit prior to transmission by a sending agent;

sending each flit to a connected receiving agent;

examining the sequence identifiers of each flit to determine the sequence of flits being received by the receiving agent; and,

requesting the sending agent to resend a flit for which the sequence identifier is determined to be incorrect.

9. A method as defined in claim 8 further comprising the step of holding a copy of each flit for a period of time necessary for said examining step to determine that the sequence identifier for a transmitted flit is correct and discarding said copy when said sequence identifier for the transmitted flit is correct.

10. A method as defined in claim 8 wherein said predetermined size is within the range of about 64 to about 256 bits.

11. A method as defined in claim 10 wherein said predetermined size is about 128 bits.

12. A method as defined in claim 8 wherein said sequence identifier is a number that is changed in a predictable manner for each successive unit.

13. A method as defined in claim 8 wherein said number incremented by a known value for each successive unit.

14. A method for providing error detection and correction of transmission of data units between sending and receiving agents connected in a network

3 or computer interconnect environment, the data units being of a predetermined size and
4 having a control portion and an information portion, the method comprising:

5 the sending agent inserting a sequence identifier in each data unit;
6 the sending agent sending the data unit to the receiving unit;
7 the sending agent retaining a replica of the data unit in a memory;
8 the receiving agent examining the sequence identifiers of each data unit to
9 determine the sequence of data units being received by the receiving agent;
10 the receiving agent requesting the sending agent to resend a data unit for
11 which the receiving agent determined the sequence identifier to be incorrect.

12 15. A method as defined in claim 14 wherein said sequence identifier is
13 inserted in the control portion of the data unit.

14 16. A method as defined in claim 14 wherein said predetermined size is
15 about 128 bits.

16 17. A system for providing error detection and correction of
17 transmission of data units in a network or computer interconnect environment, the data
18 units being of a predetermined size and having a control portion and an information
19 portion, the system comprising:

20 a sending agent for inserting a sequence identifier in each data unit to be
21 sent, the sending agent retaining a replica of the data unit in a memory;

22 said sending agent sending the data unit to the receiving unit;

23 a receiving agent for receiving each data unit, the receiving unit examining
24 the sequence identifiers of each data unit to determine the sequence of data units being
25 received thereby;

26 said receiving agent requesting said sending agent to resend a data unit for
27 which said receiving agent has determined the sequence identifier to be incorrect.

- 1 18. A system as defined in claim 17 wherein said predetermined size is
2 about 128 bits.
- 1 19. A system as defined in claim 17 wherein said sequence identifier is
2 inserted in the control portion of the data unit.

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